

Number	Comment	USACE Response
Oregon DEQ		
General	<p>General Comments</p> <p>DEQ and USACE still disagree on the application of water screening values, the importance of estimating mass loading rates of persistent bioaccumulative toxicants (PBTs) to surface water, and the potential importance of polychlorinated biphenyl (PCB) transport with petroleum hydrocarbons.</p> <p>During development of the 2018 work plan for stormwater and catch basin sampling, DEQ commented on the selection of more appropriate screening values (email dated 10/12/18); USACE disagreed with DEQ’s position (see USACE response to comments,12/19/18). This is still an ongoing issue about application of state standards. Oregon has a non-degradation policy for surface waters, and DEQ considers it unacceptable to discharge chemical contaminants to waters of the state at concentrations exceeding ambient water quality criteria, especially for persistent, bioaccumulating chemicals such as PCBs. The acute criterion for PCBs proposed by USACE is based on direct toxicity to aquatic organisms is several orders of magnitude higher than a risk-based concentration protective of the human health fish consumption pathway.</p> <p>This mass loading issue is discussed in DEQ’s Guidance for Evaluating the Stormwater Pathway at Upland Sites (cu-StormwaterSites.pdf (oregon.gov)). A potential contribution to this loading is the transport of PCBs with petroleum hydrocarbons.</p> <p>During the optimization review, the team did not have the information contained in the catch basin report. Had they been aware of the high concentrations of PCBs and PAHs in stormwater and catch basin sediments, the optimization team may have reached different conclusions about the potential transport of contaminants in stormwater to the Columbia River.</p> <p>It would have been possible to provide a more thorough review of this source control document if there had been time for a detailed review of the Sandblast AOPC soil data report (provided February 8, 2022), final sediment passive sampling results, and final biota sampling results. That would have allowed for a comprehensive review of lines of evidence related to potential sources of contaminants to stormwater, and correlations with the inwater presence of contaminants. Initial indications are that stormwater was at least a past source of PCBs to inwater sediment.</p> <p>For the reasons provided above, DEQ has concerns that existing practices for management of stormwater may not be sufficient to protect beneficial uses of the Columbia River. Based on our screening of stormwater data, DEQ’s Cleanup Program will consult with our Water Quality Program regarding discharges of contaminants of concern.</p>	<p>USACE is aware of the State’s previous mentioned opposition to the Benchmark Screening Criteria established to help guide the sampling effort and evaluation of stormwater. As indicated in previous response to comments, there are no promulgated criteria for stormwater collected immediately at the point of discharge. As such, USACE developed site specific criteria to help guide selection of analytical methods and interpretation of subsequent results. Selection of these Benchmark Screening Criteria were not done with the intent of complying with Clean Water Act Requirements and this sampling and analysis is not intended to fulfill any existing requirements of the Clean Water Act or any other potentially relevant ARARs.</p> <p>The Optimization Report does contain a discussion of the catch basin solids and stormwater analytical results. As stated in the Optimization Report, “Stormwater sampling conducted by USACE during the period 2018 to 2020 included analysis for TPH, and the TPH concentrations were very low. TPH-gasoline was not detected at either outfall in four sampling events, and TPH-diesel and TPH-motor oil were detected no higher than 0.28 µg/L at either outfall.”</p>
1a.	<p>Sections 2 and 3, Drain Catch Basins and Outfalls</p> <p>The locations of Outfalls #1 and #2 in Figure 3 are reversed from the locations in Figure 2. Based on the Remedial Investigation (RI) and the Sandblast Area Preliminary Assessment and Site Inspection (Revised draft September 2002), Figure 2 appears correct. On Figure 2, add direction arrows for the drain pipes, label the landfill access road and equipment laydown area, and show arrows for direction of overland stormwater runoff.</p>	<p>Figures have been combined and updated with the requested information (Figure 2). Figure 4 was added to show approximate drainage areas and overland flow.</p>
1b.	<p>Sections 2 and 3, Drain Catch Basins and Outfalls</p> <p>Text indicates that catch basin CB-4 does not drain directly to CB-3, and instead the CB-4 outlet pipe drains to the ground surface near CB-3. This is important in the understanding of the results, and problematic in that</p>	<p>CB-4 discharges to the vegetated slope above CB-3. This slope is steep and no water pooling would occur. Stormwater would either infiltrate on the slope or drain downslope toward CB-3; none would be expected to drain do CB-2. Figure 4 was added to show approximate drainage areas and overland flow.</p>

	<p>stormwater can pool in the soil area and accumulate in site soils. Does any of this overland flow also drain to CB-2 and Outfall #2? Does it drain or flow to valve box K and then to Manhole M?</p> <p>As an indication of the importance of identifying potential sources and piping connections, catch basin solids from CB-3 and CB-4 have significant concentrations of total PCBs (6.9 mg/kg and 6.16 mg/kg, respectively), DDT (49 µg/kg to 72 µg/kg), PAHs, motor oil (4,200 mg/kg), lead (1,600 mg/kg), and zinc (910 mg/kg) as examples. This correlates with the highest stormwater detections of total PCBs found in downgradient CB-1 of 0.48 µg/L).</p> <p>Some text is missing for several entries on Figure 3. Expand the table and provide a date for the drain line clearing information presented. Were volumes of catch basin solids accumulating in each of the basins recorded between cleanout events?</p> <p>Rather than just indicate with an arrow on Figure 3, provide an approximate outline for the area of the PCB transformer oil release. Additional details on the figures, along with flow direction arrows, helps to identify potential sources of contaminants to catch basins.</p>	<p>The new Figure 3 was added detailing the piping connections as confirmed by CCTV records and additional field investigations. The former Figure 3 was removed and relevant information was included in other figures. This former graphic was field notes provided by the drain line clearing contractor. As noted in the comment the inset table in this former figure was not complete; the contractor did not provide the full table.</p> <p>The contractor investigated the line between Manhole M and Valve Box K to confirm no connections to the storm drain system; none were found. As such these were not included in the new figures detailing the storm drain system.</p> <p>During cleanouts, depth/volume of solid was not recorded.</p> <p>As noted above, the former Figure 3 was removed due to incomplete and inconsistent information. The implied PCB oil release area is one of these inconsistencies. Refer to Figure 3-4 of the RI for a more accurate map.</p>
1c.	<p>Sections 2 and 3, Drain Catch Basins and Outfalls</p> <p>Two small two-inch drains from the Sandblast building were not inspected because the contractor’s equipment would not fit into those pipes. Based on Figure 3, these two smaller pipes drain the sandblast building (catch basins B1, B2, and C). All three of these catch basins (and two pipes) drain into CB-3 where some of the more significant lead, zinc, PCB, PAH, TPH, phthalate and organochlorine contamination was measured. We recommend using other tools, such as sediment traps or targeted water sampling, to evaluate what areas these pipes drain and any associated contamination.</p>	<p>USACE does not see a need to rescope at this time. Current results and analysis of the stormwater data do not indicate a need for additional investigation in order to evaluate a source control RAO and associated alternatives for presentation in the Revised FS.</p>
1d.	<p>Sections 2 and 3, Drain Catch Basins and Outfalls</p> <p>Catch Basin 4: It is not clear based on the map what area drains into CB-4. Also, describe the drain in the electrical room (“N”) and the area it drains currently and historically.</p>	<p>Figure 4 was added to show approximate drainage areas. CB-4 is the most up-gradient of the catch basins. It is surrounded by relatively flat ground, so it is difficult to know the exact drainage area.</p> <p>Drain N has been simply labeled “drain” in Figures 2 & 3. As shown in Figure 3 it appears to be a type of floor drain directly in the concrete and is 11 ft east of CB-3. Upon opening the cap, the drain appears to drain toward CB-3 though there is no CCTV video to confirm.</p>
1e.	<p>Sections 2 and 3, Drain Catch Basins and Outfalls</p> <p>Manhole-M: Describe what currently and historically drains into Manhole M. Figure 3 implies that there is a drain line associated with the manhole. It appears water from CB-3 may enter near valve box K. Describe where water drains from Manhole-M.</p>	<p>The contractor investigated the line between sanitary sewer Manhole M and Valve Box K to confirm no connections to the storm drain system; none were found. It was estimated that CB-2 is approximately 1 ft from the line connecting valve box K to manhole M.</p>
1f.	<p>Sections 2 and 3, Drain Catch Basins and Outfalls</p> <p>Stormwater Sampling of CB-1 instead of OF-1: Sampling CB-1 is stated as conservative for sampling problems with Outfall 1 (end of pipe). However, this assumption depends on the competency and connectiveness of the stormwater system. Given that a large hole was discovered in the bottom of the drainpipe that leads from CB-1 to OF-1, this assumption is not clear. Contamination in soils in this area may be elevated from ongoing stormwater discharge.</p>	<p>USACE agrees that this assumption needs to be reevaluated for any future sampling events. Since sampling was completed, review of the CCTV footage indicates that CB-1 connects to the outfall line between CB-3 and OF-1. Sampling only at CB-1 may not capture the most representative sample.</p> <p>Upon reviewing the CCTV footage and contractor’s notes, the ‘large hole’ is better described as a pipe joint offset. Text was revised accordingly.</p>
1g.	<p>Sections 2 and 3, Drain Catch Basins and Outfalls</p> <p>Catch basin CB-5 is not present in figures from the 2002 PA/SI or the 2012 RI report. If CB-5 was installed or discovered after these reports, describe the circumstances.</p>	<p>CB-5 was discovered more recently. It had become overgrown with roots and was not initially visible.</p>

1h.	Sections 2 and 3, Drain Catch Basins and Outfalls Provide a description of the area occupied by the septic system, and any historic or current lines or drains.	As detailed in the 2012 Remedial Investigation, the septic system serviced a bathroom with possible connections to adjacent floor drains in the former sandblast building. Soil sampling indicated the septic system was not a source of contamination. During the 2019 CCTV investigations of the stormdrain system, no septic line or cleanout was discovered.
1i.	Sections 2 and 3, Drain Catch Basins and Outfalls What is the nature of the material draining to CB-2 from the upgradient drainage ditch? Indicate locations on a figure of drainage ditches shown in photographs.	As shown in the first Photo, the drainage ditch consists of a clear water stream through thick vegetation.
2	Section 3.3, Benchmark Development The benchmark criteria need to be modified to be consistent with DEQ’s previous comments on the work plan (DEQ email, October 12, 2018), and DEQ’s February 4, 2022 comments on the groundwater sampling plan. <see subsequent comments for details>	See response the General Comment above.
2a.	The U.S. Environmental Protection Agency Freshwater National Ambient Water Quality Criteria should be first in the hierarchy for benchmark criteria, unless a state criterion is lower.	See response the General Comment above. This hierarchy was previously presented and commented on in 2018 prior to the QAPP development.
2b.	Chronic versus acute criteria: The National (and Oregon State) aquatic ambient water quality criteria that protects against chronic and bioaccumulative effects should be used to evaluate stormwater data. Acute criteria should not be first in the hierarchy.	See response the General Comment above. Because sampling was completed at the point source of discharge, rather than the receiving water body, Ambient Water Quality Criteria are not directly applicable. Thus, USACE selected acute criteria ahead of chronic for analysis of this stormwater data. When water samples are collected directly from the water body of the Columbia River, USACE agrees that chronic criteria will be relevant to the analysis to ensure compliance with the Clean Water Act.
2c.	Total PCBs: The chronic national ambient water quality criteria is 0.014 µg/L (same as the state of Oregon). This value should be used as the lowest screening not the acute value of 2 µg/L presented in the report.	See response to 2b above.
3.	Section 3.5, Storm Conditions The goal for the samples to be representative of “first flush”. Because conditions may vary significantly over the course of a year, this ensures the most protective few samples are collected for evaluation. Future sampling targeting first flush conditions should be proposed.	USACE agrees that capturing first flush conditions provides the most conservative results. During these sampling events first flush conditions were targeted and captured for most of the storms. If future stormwater sampling is conducted, first flush conditions will again be targeted.
4.	Section 5 Present the unit hydrograph and calculated time of concentration for each of the basins (and basin sub-areas as needed to represent the variability in the site features) during each of the four storm sampling events. This critical information is necessary to evaluate the results of the sampling event. Add a discussion about the time of sampling compared to the overall storm event to evaluate if there was a lag for stormwater traveling into the collection system from specific areas of the site – and ultimately to the outfall discharge point. Also, discuss if the results are representative of the peak discharge from the storm event. Include a discussion about the differences in the physical parameters measured between the events, and discuss any correlations between the sampling time and these parameters. Provide this information for each of the sampling events.	The purpose of this sampling was to understand chemical concentrations in the stormwater and catch basin solids; not necessarily to quantify the flow pattern for each catch basin. Unit hydrographs can be useful tools when evaluating large watershed-wide rain events; however, these drainage areas are very small. USACE does not see the need to collect such labor intensive data for these small drainages.
5.	Section 5.2.8 (and Sections 5.3.8, 5.4.8, 5.5.8, etc.), Diesel -Range Organics Diesel and motor oil are defined here with carbon ranges. Consistent with DEQ’s comments on the groundwater sampling plan, clarify that TPH samples will be analyzed without silica gel cleanup. DEQ sums concentrations of Diesel Range Organics (DRO) and Residual Range Organic (RRO) into a single Total Petroleum Hydrocarbon Diesel	In the NWTPH-GX method, sample water is introduced directly into the GC instrument and there is no silica gel cleanup. In the NWTPH-DX method, there is an optional cleanup procedure that uses sulfuric acid and silica gel to aid in the removal of non-petroleum based organic interferences, i.e. biogenic interferences. During advance discussion and reviews for the “Work Plan with Quality Assurance Project Plan Amendment

	Extended Range (TPH-Dx) value for screening human health and ecological risks. As an option, Oregon allows further refinement of TPH composition and associated toxicity by volatile petroleum hydrocarbon (VPH) and extractable petroleum hydrocarbon (EPH) analysis.	1 for Catch Basin Solids and Stormwater Sampling,” Oregon DEQ stated the preference for samples to be analyzed without silica gel cleanup. In response, USACE included the requirement “Total Petroleum Hydrocarbons analysis should not include silica gel or other cleanup that would remove polar metabolites from the sample” in instructions for the laboratory. NWTPH-GX and NWTPH-DX analyses were performed for the storms on 07 June 2019, 16 October 2019, 15 November 2019, and 13 March 2020, and silica gel cleanup was not used.
6a.	Section 5.3.5 (and Section 5.4.5, 5.5.5., etc.), PCBs It should be stated in the text that some samples were only analyzed for a subset of PCB congeners. A footnote to Table 12 states (under Methods) that the November 2019 storm (before cleanout) used Method 8082A, and measured only 21 congeners. This is significantly different than what was measured after clear out (storms 1 to 4). The report should state that the 2019 results are not directly comparable to those from storms 1 to 4 by Method 1688C for all congeners. The reference to 206 congeners appears to be a typographical error, and likely should instead refer to 209 congeners.	Text was added to Section 5.1.4 to clarify that this sampling event only analyzed 22 congeners and cannot be directly compared to other sampling events. 206 was corrected to 209 in all applicable locations.
6b.	The summing of PCB congeners should follow Kaplan-Meir methods that are consistent with other data summation methods, and do not consider all non-detects as zero concentration.	Agree. The report has been revised to include KM summations with Efron’s bias for total PCB congeners.
7.	Appendix A, Riverine Modelling Memorandum Appendix A data show the benchmarks are exceeded (highlighted in orange) for several analytes, but the table included in the text indicates otherwise. There is a great deal of uncertainty in using this kind of model, and generally more site-specific data, over multiple years, is required to provide a valid representation of the site-specific concentrations under differing rainfall/runoff scenarios. Another element not considered is the mass loading of contaminants to inwater sediment.	The orange highlighting in these tables indicates the original undiluted stormwater samples that exceeded benchmarks. The modeled diluted results, as shown on these tables, do not exceed benchmarks. This clarification was added to the table footnotes. USACE understands that there is uncertainty with this modeling, as with any model. However, USACE does not see a need to continue collecting data or remodel at this time. Current results and analysis of the stormwater data do not indicate a need for additional investigation in order to evaluate a source control RAO and associated alternatives for presentation in the Revised FS.
U.S. EPA		
General	It will be helpful combine the stormwater data with soil data and other information about known contaminant sources in the Revised FS for the Upland OU. Without the context of the soil data, it is difficult to draw conclusions from this report, other than to note that copper, PAHs, and PCBs continue to be contaminants of concern, even with filter socks to reduce solids in the stormwater. This data report will provide a nice baseline against which to compare post-remedial sampling data.	Understood, the data will be further interpreted in the context of the Upland OU in the Revised Feasibility Study. The Revised FS will include alternatives for remedial action of soils in the Sandblast AOPC. Given the current results and analysis of the stormwater provided in this report, it is anticipated that additional action to remediate soils in the sandblast AOPC will have incidental improvements to reducing concentrations in stormwater and catch basin solids.
1.	List of Acronyms. Typo. TOV total organic carbon should be TOC total organic carbon	Typo corrected.
2.	Section 2.1, page 3. The report cites a conclusion from a 2009 URS report that stormwater that flows from the former sandblast building area to the northeast infiltrates into vegetated areas before reaching the Columbia River. Has this conclusion been confirmed since 2009, perhaps during a wet weather inspection? If yes, this should be described.	This has not been directly confirmed during subsequent field events. Much of this area is flat and sheet flow direction is not easily observed unless there is significant rainfall.
3.	Figure 2. It would be helpful if the approximate catchment areas around each of the catch basins could be shown on this or another figure.	Figure 4 was added to show approximate drainage areas.

4.	Section 7.1 Riverine Modeling. Is the HVAC system a significant contributor to the total discharge through OF-2? That seems unlikely, so I am assuming I don't understand the different discharge scenarios. Please describe them more fully and/or provide a table with the discharge rates for each scenario. Also, please clarify -- did the models assume a receiving water concentration of zero, or were Columbia River background concentrations used in the calculations?	Yes, HVAC is a significant contributor to discharge at OF-2. Details about the modeling are included in Appendix A. In the main text, references were added to the tabulated discharge rates. As described in Appendix A, Columbia River concentrations were assumed to be zero.
5.	Section 8, Conclusions and BMP Recommendations. USACE may want to implement additional housekeeping measures to improve stormwater quality. Regular sweeping of parking lots can reduce brake dust in stormwater for example, and brake dust is a significant source of copper. Moving galvanized metal equipment indoors or covering it can reduce zinc concentrations in stormwater. Good housekeeping can reduce the need for frequent filter sock changes and extend the period between catch basin solids cleanout events.	Understood. USACE will consider these suggestions if additional BMPs are deemed necessary. Currently, Bonneville does not have access to sweeping equipment, which may be a significant implementation hurdle. It is also not believed that any galvanized metal is stored outdoor, but this is noted for ongoing housekeeping. The stormwater sampling did not indicate a zinc issue.
6.	Appendix A Modeling states that the HVAC discharge is estimated to be 40 gal/minute. That is a lot of water. A garden hose discharges 10 to 15 gallons a minute. Does the HVAC system discharge three to four garden hoses of water, continuously? If yes, the HVAC system should be described, as this is an unusually high discharge rate.	USACE agrees that the volume of water discharged from the HVAC is significant. Currently the HVAC uses a water-cooled chiller. Bonneville currently has plans to replace the HVAC system in FY23 with an air-cooled system. This will significantly reduce the water discharge.
Yakima Nation		
<u>General Comments</u>		
1.	Sandblast operable unit (OU) stormwater and catchbasin solids data summarized in this report, as well as multiple other lines of evidence, emphasize the need for remedial action in the sandblast OU and additional control of ongoing stormwater contaminant transport to the river. Existing BMPs have been only partially effective at preventing uncontrolled upland sources from entering the stormwater system. Please see attached comments with recommendations for more effective stormwater BMP measures. YN would like to stress that the most effective BMP is removal of the source. <ul style="list-style-type: none">a. Surface soils in the sandblast OU greatly exceed risk-based criteria for numerous contaminants that are also found at elevated concentrations in sandblast OU catch basin solids, sandblast OU stormwater, river sediments surrounding sandblast OU outfalls, and biota (resident fish and shellfish).b. Catch basin solids from the sandblast OU clearly indicate an ongoing source to the stormwater system from the sandblast OU. For example, 2018-2019 catchbasin solids exceedances were noted for PCBs, DDT, PAHs, motor oil, lead, and zinc.c. Stormwater samples from the sandblast OU exceeded risk-based surface water criteria for copper, lead, PAHs, and PCBs in the 2018-2019 dataset, indicating an ongoing source to the river.d. The footprint of contamination in sediments surrounding sandblast OU stormwater outfalls OF-1 and OF-2 confirm that uncontrolled upland sandblast OU sources have resulted in contaminant transport to river sediments.e. Finally, elevated concentrations of numerous upland contaminants (metals, pesticides, PCBs) have also been found in aquatic organisms (resident fish and shellfish) at Bradford Island, with PCBs being the greatest risk driver for both ecological and human health.	USACE agrees the removal of the source of contamination is the most effective way to prevent contamination from entering the stormwater system. USACE is continuing to move forward with the Revised Feasibility study for the Upland OU, in coordination with EPA, to address soils in the sandblast area. New RAOs are being included to address source control and transport of contaminants between the Upland and River OUs.
2.	Because there is contradiction between Draft Report figures in map labeling of outfalls OF-1 and OF-2, we ask the Corps to confirm and correct both figures and results labels so that they accurately reflect conditions at the proper locations.	The figure with the incorrect labeling was removed. Pertinent information from that figure was added to the other, correct, figure.
3.	This data will serve as an important baseline for future sampling.	Comment noted.

Specific Comments		
1.	Section 3.1 – Historic O&M Based on past verbal communication from USACE to the TAG, it is our understanding that although project staff replaced filter socks on a quarterly basis for 8-10 years, filter socks were frequently cut open to prevent clogging up until approximately 2018. We recommend noting this O&M practice in this section as well. It would also be helpful to summarize past catchbasin cleanout information with more detail to the extent possible. For example, in past TAG meetings, USACE has also verbally indicated that past catch basin cleanout materials triggered RCRA disposal criteria.	<p>The catch basin filter socks consist of an inverted cone made of a durable geotextile fabric. The cone of the filter socks has pre-cut slits at the base of the cone made by the manufacturer. These slits are intended to help manage any clogging from overflow so not to result in a complete failure of the filter sock. Filter socks are analyzed for RCRA disposal criteria each quarter and have not triggered additional disposal requirements to date.</p> <p>As noted in the RI Report, “USACE developed and implemented a regular inspection and maintenance program to prevent the discharge of sediment into the storm drain system (e.g., replacement of the filter socks on a [quarterly] basis). Additional details regarding the stormwater system sampling and cleaning activities can be found in the In Water Investigation Report (URS 2002) and the Storm Water Drain Cleaning Summary Technical Memorandum (URS 2002).”</p>
2.	Section 3.3 – Benchmark Criteria YN agrees with OR DEQ’s 2/11/2022 Section 3.3 Benchmark Development comments. USEPA National Ambient Water Quality Criteria (freshwater, chronic) should be first in the hierarchy for benchmark criteria, unless a state criterion is lower. Acute criteria should not be first in the hierarchy.	Because sampling was completed at the point source of discharge, rather than the receiving water body, Ambient Water Quality Criteria are not directly applicable. Thus, USACE selected acute criteria ahead of chronic for analysis of this stormwater data. When water samples are collected directly from the water body of the Columbia River, USACE agrees that chronic criteria will be relevant to the analysis to ensure compliance with the Clean Water Act.
3.	Section 5 and 6- Results and Discussion Based on the data provided, comparison against chronic criteria also indicate PCBs and lead (total metals analysis) exceedances of risk-based screening levels in stormwater from OF-1. These exceedances should be added to the discussion.	<p>USACE developed site specific criteria to help guide selection of analytical methods and interpretation of subsequent results. Selection of these Benchmark Screening Criteria were not done with the intent of complying with Clean Water Act Requirements and this sampling and analysis is not intended to fulfill any existing requirements of the Clean Water Act or any other potentially relevant ARARs.</p> <p>The discussion of analytical results is made in reference to the Benchmark Screening Criteria developed as part of this stormwater sampling effort. Sampling for stormwater at the end of pipe and within a catch basin do not provide comparable results for direct evaluation with Ambient Water Quality Criteria. Sampling that is done within the water body of the Columbia River will be evaluated for compliance with acute and chronic standards associated with Ambient Water Quality Criteria.</p>
4.	Septic System Please let us know where we can find a summary of investigations into potential stormwater impacts from the abandoned septic system in the former sandblast building and sandblast grit dumping area. This concern has repeatedly been raised in TAG meetings.	The Remedial Investigation includes information regarding the septic system. As noted in the RI, “A septic system formerly serviced a bathroom located in the painting (western) portion of the former sandblast building. Floor drains in the former sandblast building may have also discharged into the septic system... Because a septic tank located on Robbins Island had been backfilled with sandblast grit, the former sandblast building septic tank was investigated to determine if it had been similarly backfilled with sandblast grit. Investigation of the septic tank determined that it had not been backfilled with sandblast grit and was not a source of contamination at the Sandblast Area AOPC.”
5.	Stormwater System Design One question that was raised during review of this report was: What is the relative elevation difference of the catchbasin outlet compared to the catchbasin bottom in each catchbasin? This information is important for evaluating the effectiveness of the system design in preventing catchbasin solids from discharging to the river. Please help us locate this information.	This information has not been collected.
Farallon Consulting for Yakima Nation		
To protect stormwater and surface water and confirm BMPs are effective, additional steps should be taken to identify contaminant sources and monitor source control efforts. The following BMPs are used at facilities with similar operations and contaminants to protect stormwater:		

1.	Sample stormwater discharge from each of the outfalls quarterly to confirm the BMPs are effective at removing contaminants. Quarterly sampling provides information of how the seasons and changes in facility activity may impact stormwater quality.	USACE does not see a need to conduct additional sampling at this time. Current results and analysis of the stormwater data do not indicate a need for additional investigation in order to evaluate a source control RAO and associated alternatives for presentation in the Revised FS.
2.	Replace the straw waddles with silt fence. Silt fence reduces the transport of course sediment from road runoff, providing a physical barrier to sediment in overland stormwater flow, and is more resilient than straw waddles. Straw waddles break down quickly and are rendered ineffective.	Because catch basin inserts (filter socks) are already being used in addition to the straw waddles, USACE does not believe replacing waddles with silt fence will be a significant benefit. Silt fencing is also more likely to impact ongoing operations and vehicle access.
3.	Implement a vacuum sweeping routine on paved surfaces to remove and inhibit build-up of road dirt that may have concentrations of metals and PAHs. Quarterly sweeping at a minimum is recommended for similar facilities with maintenance and equipment operations.	Understood. USACE will consider this suggestion if additional BMPs are deemed necessary. Currently, Bonneville does not have access to sweeping equipment, which may be a significant implementation hurdle.
4.	Implement a BMP maintenance schedule to replace catch basin inserts and silt fencing, and to clean catch basins. Past use of catch basin inserts as reported in the 2022 Draft Report was not effective in keeping the stormwater system clean or removing contaminants from stormwater discharge. The maintenance schedule should increase catch basin insert replacement to be more frequent than quarterly, and catch basin cleaning should be conducted annually, at a minimum.	As noted in Table 1, catch basin inserts and straw waddles are replaced semi-annually. USACE does not see a need to increase the frequency at this time. Current results and analysis of the stormwater data do not indicate a need for additional BMPs.
5.	Conduct a source evaluation of current and historic operations in the vicinity of the stormwater conveyance system to identify the sources of PCBs, copper, and PAHs to the stormwater system. Controlling contaminants at the source, diverting stormwater around the source, covering the source, or relocating the source is more effective than using BMPs to remove contaminants from stormwater.	USACE is continuing to move forward with the Revised Feasibility study for the Upland OU, in coordination with EPA, to address soils in the sandblast area. New RAOs are being included to address source control and transport of contaminants between the Upland and River OUs.